UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/971,721	10/04/2001	Otto Lenherr	4780-19	3049

2352 7590 05/10/2006

OSTROLENK FABER GERB & SOFFEN
1180 AVENUE OF THE AMERICAS
NEW YORK, NY 100368403

EXAMINER	
STAICOVICI, STEFAN	
ART UNIT	**PAPER NUMBER**
1732	

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 09/971,721	**Applicant(s)** LENHERR, OTTO	
	Examiner Stefan Staicovici	**Art Unit** 1732	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 11 April 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: *None*.
   Claim(s) objected to: *None*.
   Claim(s) rejected: *26, 31-67, 69-86*.
   Claim(s) withdrawn from consideration: *None*.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☒ Other: see attachment.

ATTACHMENT TO ADVISORY ACTION

Response to Amendment

1. Applicant's after-final amendment filed April 11, 2006 has not been entered because the proposed amendments raise new issues that would require further consideration and also, since the proposed amendments are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal. Specifically, incorporating the limitation of "wherein an average temperature of the supporting core during the injection of the plastic matrix into the mold deviates by less than ±6 ^{O}C from an average temperature of the core mass or perform during plastic deformation" previously presented in claim 51, into independent claims 26 and 67, introduces subject matter in a combination which has not been previously presented and as such would require further consideration. These noted proposed amendments neither overcome the applied rejections nor clarify the claimed invention.

Claims 26, 31-67 and 69-86 are pending in the instant application.

Response to Arguments

2. Applicant's arguments filed April 11, 2006 have been considered.

3. In response to applicant's arguments against the references individually (see pages 13-16 of the after-final amendment filed 4/11/2006), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

4. Applicant argues that "JP 61-016817 is silent about the use of a solidified wax body once it is shaped in the mold" (see page 13 of the after-final amendment filed 4/11/2006). In response, it is noted that the recitation "*for use* in manufacturing fiber-reinforced components in a Resin-Transfer-Molding (RTM) process" (emphasis added) has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the *purpose of a process or the intended use* (emphasis added) of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

5. Applicant argues that neither JP 61-016817 nor Johnson (US Patent No. 5,045,251) teach "about any temperature or differences in temperature between the cavity of the RTM molding tool and the preform" (see page 13 of the after-final amendment filed 4/11/2006). In response, it is noted that this argument is drawn to a newly presented claim limitation not previously presented in such a combination. Further, it is noted that under MPEP §2112(IV), "[I]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). In this case, as presented throughout prosecution of the instant application, it is well known that when using a wax core in the molding of a fiber reinforced component the deformation temperature of the core must be at least equal to or higher

than the injection temperature of the resin matrix in order that said core maintain its geometric integrity and perform its molding function. If the deformation temperature is lower, then the core will loose its geometrical integrity and as such could not be used during the molding process. Hence, it is submitted that "a basis in...technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art" has been provided as required under MPEP §2112(IV).

However, it has also been shown throughout prosecution of the instant application that even if such were not known, Johnson ('251) teaches a process of molding a hollow fiber composite structure having a hollow undercut including, wrapping a wax core with fiber material to form a wrapped assembly, placing said wrapped assembly into a mold cavity, injecting a resin into said mold cavity to impregnate said fiber material, curing (hardening) said resin to form a hardened structure and melting out said wax core to form said hollow fiber composite structure (see col. 6, lines 34-62 and, col. 8, lines 17-24 and 43-47). Furthermore, Johnson ('251) specifically teaches removing the wax core after curing of said resin by melting said core, hence teaching that the melting temperature of the wax core is higher than the injection/curing temperature of the resin because if the melting temperature of said core were lower, than said core would melt/deform prior to curing which is in contradiction to the specific teachings of Johnson ('251) (see col. 8, lines 14-25). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a wax material having a deformation (melting) temperature during plastic deformation at least equal to the injection temperature of a resin during production of a fiber reinforced component as taught by Johnson ('251) for making the

wax core by the process of JP 61-016817 because Johnson ('251) specifically teaches removing the wax core after curing by melting said core, hence providing for an improved process by allowing an efficient removal of the core in subsequent processing using said core.

6. Applicant argues that "[T]here is not the slightest hint of using the plate warmer technology taught by Vandas as a mold or a preform in an RTM-process" (see page 14 of the after-final amendment filed 4/11/2006). However, the teachings of Vandas ('884) were applied to merely show that it is known to compression mold a wax material having a melting temperature of less than 215 °F (115 °C). Therefore, it would have been obvious for one of ordinary skill in the art to have used the wax material of Vandas ('884) to mold the wax core in the resin transfer molding process of Johnson ('251) in view of JP 61-016817 because of known advantages that a higher melting temperature core provides in a resin transfer molding process such as the ability to use a higher temperature curing resin, thereby providing for an improved product having a higher resistance to temperature stresses.

7. Applicant argues that "[A]lthough Holtzberg may mention melting the core of the mold, there is absolutely no teaching concerning leading the melt directly to the mold for molding a new preform" (see page 15 of the after-final amendment filed 4/11/2006). In response, it is noted that Holtzberg ('160) specifically teaches a lost wax core process including recycling the molten wax to form new cores (see col. 16, lines 59-61). Further, it is noted in order to form a new core by recycling the old core, as taught by Holtzberg ('160), the old core must be melted as taught by the process of Johnson ('251) in view of JP 61-016817. Therefore, it would have been obvious for one of ordinary skill in the art to have recycled the molten wax as taught by Holtzberg ('160)

in the process of Johnson ('251) in view of JP 61-016817 due to a variety of known advantages that recycling provides such as reduced costs, reduced waste, etc.

8. Applicant argues that Daskivich ('903) does not teach a wax material having a volumetric expansion of less than 5% (see pages 15-16 of the after-final amendment filed 4/11/2006). In response, it is noted that Daskivich ('903) teach a wax material that also includes thermoplastic resin additives, hence teaching a wax composité. Further, Daskivich ('903) teach that said thermoplastic resin has a volumetric expansion of less than 5%. As such, the volumetric expansion of said wax composite will also be less than 5% due to the rule of mixture. Hence, it is submitted that Daskivich ('903) teaches a specific *wax based material* (wax composite) used in a lost core molding process having a volumetric expansion of less than 5% when heated from 70-220°F (see col. 3, lines 19-40).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

Primary Examiner

AU 1732

May 5, 2006